

## **Knockout Identification Of Target-Specific Sites In Peptides**

### **ABSTRACT OF THE DISCLOSURE**

5           The invention provides methods for identification and determination of target-specific sites in peptides and proteins, including a method for determining the primary sequence of a secondary structure within a known parent polypeptide that binds to the target of interest. In one embodiment of the invention, a residue or mimetic containing a nitrogen atom and a sulfur atom available for binding to a metal ion is serially substituted for single residues in or inserted between adjacent residues in a known  
10   primary sequence of a peptide or protein. The resulting sequence is complexed with a metal ion thereby forming a metallopeptide. The resulting metallopeptides are then used in binding or functional assays related to the target of interest, and the metallopeptide(s) which result in significant or substantially decreased or changed binding or functionality are determined to identify the primary sequence involved in such binding or functionality.